## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicants:	Swee M. Mok et al.	
Filed:	September 4, 2003	)
	Manufacturing and Defabrication Analysis Method and Apparatus	<ul><li>) This document was electronically filed</li><li>) using the USPTO's EFS-Web.</li><li>)</li></ul>
TC/A.U.:	2125	)
Examiner:	Rao, Sheela S.	) )
Docket No.:	CML00577T (78580)	) )
Customer No.:	22242	, ) )

# APPELLANT'S APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

Pursuant to 37 C.F.R. §41.37, the applicants hereby respectfully submit the following Brief in support of their appeal.

## (1) Real Party in Interest

The real party in interest is Motorola, Inc., a Delaware corporation having a primary place of business in Schaumburg, Illinois.

## (2) Related Appeals and Interferences

There are no known related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

## (3) Status of Claims

Claims 1-30 are each twice and finally rejected.

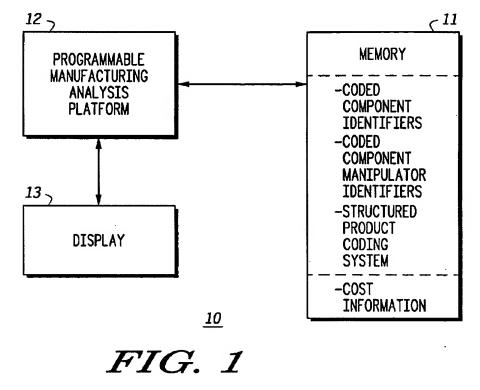
## (4) Status of Amendments

One post-final amendment has been submitted contemporaneously with this brief to cancel claims 18-30. The status of that amendment is unknown to the applicant.

## (5) Summary of Claimed Subject Matter

Manufacturing enterprises must remain cognizant of various conditions that effect the production of products, such as the availability of resources and whether certain resources can be successfully assembled into a final product.<sup>1</sup> A structured product coding system captures information regarding product components, product manipulators, and intermediate sub-assemblies and in addition to providing ready access to the information collected, can provide solutions to issues or concerns that arise.

FIG. 1 is reproduced below for the convenience of the reader.



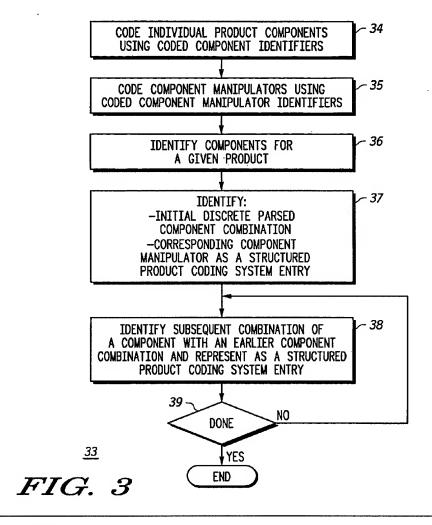
In a preferred embodiment, a platform (10) generally comprises at least a programmable memory (11), a programmable manufacturing analysis platform (12), and a display (13).<sup>2</sup> The memory (11) serves to contain coded component identifiers that each correspond to a particular individual product component as may be available for use during manufacturing.<sup>3</sup> In addition, the memory (11) stores coded component manipulator identifiers that each correspond to a particular individual component manipulator as may be

<sup>1</sup> Application page 1, lines 8-9.

<sup>2</sup> Application page 4, lines 30-32.

available for use during manufacturing, and a structured product coding system for at least one given product.<sup>4</sup> The structured product coding system comprises uniquely identified and coded nodes that are at least partially based upon the identified coded components, the coded part-mating operations, and the coded component manipulators. As shown in FIG. 1, the programmable manufacturing analysis platform (12) operably couples to the memory (11) to permit the platform (12) to write and/or read to the memory as appropriate to support a given task.<sup>5</sup> The platform (12) is preferably programmable to permit operation that is compatible with the various processes and tasks required for manufacturing.<sup>6</sup>

FIG. 3 from the application is presented below for the convenience of the reader.



<sup>3</sup> Application page 5, lines 8-16.

<sup>4</sup> Application page 5, lines 8-16.

<sup>5</sup> Application page 6, lines 2-4.

The platform (10), discussed above, facilitates a process (33) that includes coding (34) individual product components with coded component identifiers, as shown in FIG. 3.<sup>7</sup> Preferably all parts that go into making the product, including all of the consumable product components, are so coded. It is preferred that if the manufacturer fabricates more than one product, all of the components of all of the products are so coded such that each component is given only one identifier, even if that component is used in more than one product.

Therefore, if the component is used in more than one product, the coded component identifier remains constant and does not change.<sup>8</sup>

As shown in FIG. 3, the process (33) includes coding (35) the component manipulators, which are used to assemble the product components, with coded component manipulator identifiers. Component manipulators are the mechanisms that cause the assembly steps to be realized and may include a conveyor line, a gripping tool, soldering tool, an end-effector, a component feed tool, robots of all types and varieties, and essentially all non-consumable items that manipulate parts to facilitate assembly or disassembly of a given product. On the product of the product

The structured product coding system is then formed based on these various identifiers and specific structured producing coding system entries as discussed below.<sup>11</sup> Before the components can be combined, at least some, and preferably all of the components used to fabricate a product are identified (36) from the available coded individual product components.<sup>12</sup>

The process (33) provides for identification (37) of an initial discrete parsed combination of at least two of the components, which combination comprises a first step of the manufacturing process for that product.<sup>13</sup> Preferably, this step also includes identification of the handling operation that is used to effect this first combination of components.<sup>14</sup> The coded identifiers that correspond to the identified elements are then used to represent the

<sup>6</sup> Application page 6, lines 6-9.

<sup>7</sup> Application page 6, lines 26-28.

<sup>8</sup> Application page 4, lines 10-14.

<sup>9</sup> Application page 3, lines 21-25; Application page 7, lines 29-31.

<sup>10</sup> Application page 7, line 31 to page 8, line 4.

<sup>11</sup> Application page 3, lines 25-28.

<sup>12</sup> Application page 8, lines 21-23.

<sup>13</sup> Application page 8, lines 27-29.

<sup>14</sup> Application page 8, lines 29-31.

identified initial discrete parsed combination as a particular corresponding structured product coding system entry (for example, a node or leaf in a corresponding hierarchical representation of the product). After the initial combination, the process 33 then identifies 38 each subsequent combination such as, combining a previous combination with another component. 16

As shown in FIG. 3, the process 33 also determines whether a conclusion has been reached 39.<sup>17</sup> When uncombined components remain, the process (33) essentially repeats itself to facilitate generation of additional corresponding structured product coding system entries.<sup>18</sup> The process iteration is necessary since complete assembly of the manufactured product typically requires combining components into sub-assemblies and then combining those sub-assemblies to form other sub-assemblies or component(s).

Complete assembly/disassembly instructions for a product can be represented in a binary tree (50). Such a binary tree (50) defines and presents the sequence by which components are merged and the types of operations that are used to effect the merging of components. Further, a binary tree (50) generally comprises a plurality of hierarchically related nodes or leaves that each correspond to a particular structured product coding system entry. <sup>19</sup>

The binary tree (50) can be stored in the memory (11) and/or used by the programmable manufacturing analysis platform (12) to help illuminate relevant aspects of the assembly or disassembly process. The binary tree (50) is often the basis upon which a more detailed generic assembly/disassembly tree is based (60).<sup>20</sup> To generate the generic assembly/disassembly tree (60), the user selects the specific manipulators from amongst the previously identified and coded manipulators that are to be used to facilitate the necessary assembly operations. The user selects and assigns specific manipulators for use with each of the components identified in the earlier defined binary assembly tree (50).<sup>21</sup> Before a given

<sup>15</sup> Application page 8, line 31 to page 9, line 3.

<sup>16</sup> Application page 9, lines 14-17.

<sup>17</sup> Application page 9, lines 25-27.

<sup>18</sup> Application page 9, lines 27-29.

<sup>19</sup> Application page 10, lines 10-18.

<sup>20</sup> Application page 10, lines 18-20.

<sup>21</sup> Application page 10, lines 25-30.

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component is ready to be merged with another component or sub-assembly, a sequence of operations will often be necessary.<sup>22</sup>

FIG 2. below illustrates a product produced from the process described above.

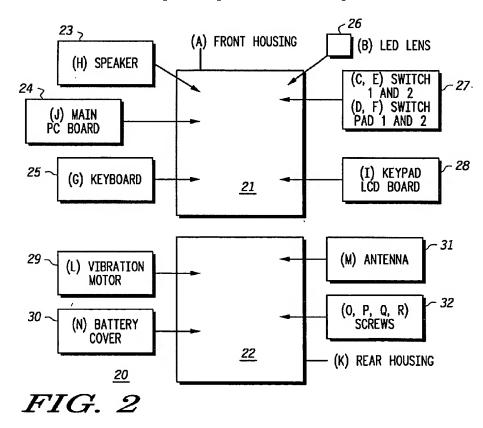


FIG. 2 illustrates an exemplary product, a handheld wireless communication device that could be manufactured pursuant to the process (33). As shown, the device comprises a number of components such as a front housing (A)(21) and a rear housing (K)(22). The front housing (21) components include a speaker (H)(23), a main printed circuit board (J)(24), a keyboard (G)(25), a light emitting diode lens (B)(26), two switches (C and E) and two corresponding switch pads (D and F)(27), and a keyboard liquid crystal display board (I)(28). The rear housing (22) components include a vibration-imparting motor (L)(29), a battery cover (N)(30), and an antenna (M)(31). Four screws (O, P, Q, R)(32) serve to couple the front and rear housings (21) and (22).

<sup>22</sup> Application page 10, lines 30-32.

<sup>23</sup> Application page 6, lines 15-24.

To illustrate the process (33), the components of exemplary product (20) have been given coded component identifiers. For example, the front housing component (21) has the coded component identifier "A." <sup>24</sup> Other identifiers could be used and may correlate to the component source, component cost, and durability, among others. The example product (20) is formed of the components coded as A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, and R. <sup>25</sup> Component manipulators are used to combine the coded components into the sub-assemblies, as defined in the structured product coding system entries. The process (33) continues to use the manipulators to combine components and sub-assemblies as specified in the binary tree until the process (33) is finished and the product is fully assembled.

A structured product coding system allows users to effectively manage the manufacturing process, for example by predicting manufacturing or defabrication costs, controlling inventory, and effectively scheduling maintenance of the manipulators. A manager having access to the structured product coding system for a given product can alter specific objects to test their impact on the overall cost of assembly or disassembly. For example, the manager can test the substitution of a given manipulator, machine X, with a different machine Y or test the order of assembly to assess the resultant cost differential. In addition to system analysis, since cost is dependent on variables such as cycle time, tooling costs, process yield over a number of operations, mean time between failure during a number of operations, and the extent of manual intervention needed to operate the equipment, information on these variables may also be available from the structure product coding system.

## (6) Grounds of Rejection to be Reviewed on Appeal

Claims 1-18 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 19-30 are rejected as being dependent upon a rejected base claim. The applicant disputes these rejections.

<sup>24</sup> Application page 7, lines 15-16.

<sup>25</sup> Application page 6, lines 24-26.

<sup>26</sup> Application page 4, lines 23-29.

## (7) Arguments

# Rejections under 35 U.S.C. § 101

As previously stated, Claims 1-18 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. However, the claimed subject matter is a process having useful, concrete, and tangible results. Under the Office's "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Guidelines) the present invention is rightly considered statutory subject matter as it is a process with practical applications. Further, pursuant to *Ex Parte Lundgren*<sup>28</sup> and *AT&T Corp. v. Excel Comm.*<sup>29</sup>, statutory subject matter includes a process that produces a useful, concrete, and tangible result, such as the product coding system claimed here.

#### I. THE CLAIMED INVENTION FALLS WITHIN STATUTORY CATEGORY

Under § 101 a patent is granted to one who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." Thus, § 101 defines four categories of inventions that Congress has deemed to be appropriate subject matter. One of those categories, a process, defines actions to be performed. Claim 1 is directed to a series of steps or acts to be performed and therefore, the claimed subject matter is direct to one of the four statutory categories.

## II. THE CLAIMED INVENTION DOES NOT FALL WITHIN A JUDICIAL EXCEPTION

The inquiry does not end at whether the invention falls into one of the four statutory categories. Whether or not the process falls into one of the judicial exceptions must also be determined. Claims directed to nothing more than abstract ideas, laws of nature, and natural phenomena are considered to be exceptions. Abstract ideas, for example, can include mathematical algorithms and legal rights. While each step-by-step process involves an algorithm, broadly defined, the judicial exception, abstract idea includes mathematical algorithms. The claimed invention, while being a broadly defined algorithm, it is not a mathematical algorithm. Instead the claims are directed to a number of steps and while some,

<sup>27</sup> Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, 1300 Off. Gaz. Pat. & Trademark Office 142 (Nov. 22, 2005).

<sup>28</sup> Ex Parte Lundgren, Appeal No. 2003-2088 at 4-9 (B.P.A.I. 2005).

<sup>29</sup> AT&T Corp. v. Excel Comm., 175 F.3d 1352, 1355-60 (Fed. Cir. 1999).

but not all of those steps may be mathematically expressed, the process as a whole is not a mathematical algorithm. The claim is dependent on real-world variables and the claimed invention is not a simple reduction of those variables into a mathematical equation. Instead, the claim, through the analysis platform, allows managers to find solutions to problems that may arise during production.

However, even if the subject matter is considered a mathematical algorithm and thus, an abstract idea, it may still be patentable subject matter. If an abstract idea, law of nature, or natural phenomena has a practical application or use, the subject matter may still be statutory subject matter. Thus, it follows that subject matter having practical applications does not fall within the judicial exceptions.<sup>30</sup> According to the Guidelines, a practical application can be proved two ways: the claimed invention physically transforms a physical object or the claimed invention produces a useful, concrete and tangible result. Claim scope must be determined to ascertain whether the claims cover a § 101 exception or a practical application of a § 101 exception. Claim 1, listed below, includes the steps for establishing and forming a structured product coding system.

### III. THE CLAIMED INVENTION PROVIDES A PRACTICAL APPLICATION

While the claims do not cover the production of an explicit physical transformation, the Guidelines articulate the settled position that "physical transformation 'is not an invariable requirement, but merely one example of how a mathematical algorithm [or law of nature] may bring about a useful application." However, the claimed invention does produce a useful, concrete, and tangible result. The focus of such an inquiry is whether the claimed invention's *final* result is useful, tangible, and concrete. Such a useful, concrete, and tangible result flows inherently from the invention as claimed.

If a claimed invention satisfies the utility requirement of § 101, the claimed invention is considered useful for purposes of being statutory subject matter. This utility must be

<sup>30</sup> In Ex Parte Lundgren, Appeal No. 2003-2088 (B.P.A.I. 2005), the Court decided that there was no technological arts test and overturned the examiner's finding that the claims were "nothing more than an abstract idea which is not associated or connected to any technological art." The Guidelines requirement that the claimed invention prove it is not an abstract idea, law of nature, or natural phenomena by having a practical application is believed to be against the teachings of Lundgren, as discussed below.

31 Guidelines page 20, lines 2-4 (citing AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1358-58

<sup>(</sup>Fed. Cir. 1999)).

specific, substantial, and credible. The invention as claimed is directed to forming a structured producing coding system and such a system serves a number of useful purposes. For example, "a structured product coding system can serve a variety of managerial and line functions including, but not limited to, manufacturing cost prediction, de-fabrication processing, de-fabrication cost prediction, inventory control and so forth. Such a structured product coding system further provides a substantially more encompassing view of the entire product (from design to manufacture to disassembly) than past platforms or processes and thereby provides a more powerful integrated analysis tool." These benefits result from the performing the process as claimed and thus the claimed invention has a number of useful purposes.

Whether the invention produces a concrete result is also considered when evaluating practical applications. As the opposite of concrete is unrepeatable or unpredictable, a claimed invention is not concrete if a result cannot be assured or reproduced. Each time the claimed process is implemented it provides a reproducible and predictable result, a structured product coding system that is formed in a manufacturing analysis platform. The structured product coding system created is based on the coding of identifiers, components, part-mating operations, and identified combinations. If certain values are input into the system and structured product coding system 1.2 results, when those same values are input into the system again, the same structured product coding system 1.2 will be produced. Therefore, the claimed invention produces a concrete result.

Another consideration is whether the invention produces a tangible result. This requirement does not mean that a claim must be tied to a machine or operate to alter materials.<sup>33</sup> Instead, the process must produce a real world result. For example, merely calculating a price without more may not produce a real world result under the Guidelines, but if the price is calculated *and then conveyed* to a potential customer, the process becomes tangible because conveying the result occurs is in real world. The claimed invention, like the result that is calculated and conveyed, occurs in the real world because the structured product coding system is formed in a manufacturing analysis platform that exists in the real world. Further, as detailed in the disclosure, a structured product coding system produces real world

<sup>32</sup> Application page 4, lines 23-29.

<sup>33</sup> Guidelines page 21, lines 15-17.

results by predicting costs and controlling inventory. Since the claimed invention produces a useful, concrete, and tangible result, the claimed invention clearly has a practical application as defined in the Guidelines.

# IV. THE CLAIMED INVENTION IS NOT CLAIMING "EVERY SUBSTANTIAL PRACTICAL APPLICATION"

The inquiry continues, under the Guidelines as to whether the claimed invention preempts an abstract idea, law of nature or natural phenomenon.<sup>34</sup> A patent cannot be obtained on a process that covers every substantial practical application of an abstract idea, because it would, in practical effect, be a patent on the abstract idea itself. The inquiry is focused on whether the practical application found in the claim covers every substantial practical application. The present claims do not cover every substantial application of such a manufacturing process, but instead cover a specific application as evidenced by the particular coding, forming, and identifying steps that result in the structured product coding system.

## V. EXAMINER'S ARGUMENTS

The Examiner stated that the "claims feature limitations that are abstract and are not limited to a practical application or use of the abstract ideas. Furthermore, the limitations of the instant claims feature non-functional descriptive material." However, the claimed subject matter is more than a mere abstract idea and under the Guidelines, the present invention is rightly considered statutory subject matter as it is a process with practical applications.

As but one example in this regard, the Examiner's argument that the claimed limitations are abstract and not limited to practical application or use of abstract ideas ignores the wording "forming, in a manufacturing analysis platform, a structured product coding system." Since each of these claims forms a structured product coding system, the practical applications that flow therefrom are present in each claim. These claims are not theoretical or detached, but instead are grounded in a manufacturing analysis platform and include steps

<sup>34</sup> Guidelines page 23, lines 1-2.

<sup>35</sup> Office Action mailed January 20, 2006, page 2, ¶ 8.

<sup>36</sup> Application claim 1, line 9.

that are appreciable and can be observed and perceived. Thus, the claims remain limited to include only statutory subject matter.

Further, the Examiner's argument that the claims feature non-functional descriptive material is incorrect because it ignores the functional interrelationship between limitations provided in the claims. For example, a functional relationship exists between the coding of identifiers and the structured product coding system that subsequently uses the identifiers to help form the system.

Further, the Examiner's statement suggests that the claims were not considered as a whole. Considering the claims as a whole, however, is a requirement to determining whether the claimed invention is directed to statutory subject matter. Considering the whole invention as claimed must be done to determine if the claims merely cover non-statutory subject matter such as music, literature, or compilations of data by merely recording it in a computer.<sup>37</sup>

The claimed invention is not merely a compilation of data, but is a functional analysis tool having a "logical relationship among data elements, designed to support specific data manipulation functions." Non-functional descriptive material does not "define any structural and functional relationship between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized."

The structured product coding system formed in the manufacturing analysis platform combines and identifies combinations based on various user inputs. This provides the user with information via coding system entries about the manufacturing process being represented by the platform. As detailed above, the claimed invention does have a practical application by producing a useful, concrete, and tangible result.

In addition, the Examiner has not shown which, if any, limitations are believed to be descriptive material and the applicant questions whether the claims actually include such descriptive material, as all of the limitations in the claim are functionally related to creating the structured product coding system and are not merely descriptive.

<sup>37</sup> Guidelines, page 51, lines 4-18.

<sup>38</sup> Guidelines, page 50, lines 55-56 (citing the New IEEE Standard Dictionary of Electrical and Electronic Terms 308 (5<sup>th</sup> ed. 1993)).

<sup>39</sup> Guidelines, page 52, lines 17-19.

#### VI. THE GUIDELINES

The claimed invention falls squarely within the statutory subject matter as outlined in the Guidelines; for the record, however, the applicant notes that the Guidelines appear to closely adopt the dissent in *Lundgren* and are a bit narrower that the precedent set by that decision. In *Lundgren*, the Board reversed the Examiner's rejection under § 101 (non-statutory subject matter) and rejected the technological arts test. Judge Barrett's dissent while rejecting the "technological arts" test still emphasized physicality through requirements of transformation, and useful, concrete, and tangible results.

The *Lundgren* court confirmed that the pertinent issues to consider when evaluating whether a mathematical algorithm is statutory are whether the algorithm "produces[s] a useful, concrete, tangible result without pre-empting other uses of the mathematical principle." Under this approach, instead of focusing on the claimed invention's physicality, the focus should instead be on whether the result produced is useful, concrete, and tangible. The claimed invention as discussed above does produce a useful, concrete, and tangible result without pre-empting other uses of the principles employed. In addition, the claimed invention is not a mathematical algorithm or equation, like the economic theory in *Lundgren*. Instead, the process applies a number of algorithms, some of which may be mathematically expressed, to produce a useful tool.

In sum, whether evaluating the claims under the Guidelines or the slightly broader standard in *Lundgren*, the claimed invention is directed to § 101 statutory subject matter. Therefore, the applicant respectfully submits that the claims are directed to statutory subject matter and requests that these claims be allowed.

<sup>40</sup> Ex Parte Lundgren, Appeal No. 2003-2088 (BPAI 2005).

<sup>41</sup> Id.

<sup>42</sup> Id. at 87-88.

# (8) Claim Appendix

- 1. (Previously amended) A method comprising:
- coding a plurality of individual product components using at least corresponding coded component identifiers;
- coding a plurality of component manipulators using at least corresponding coded component manipulator identifiers;
- coding a plurality of part-mating operations for at least one of assembly and disassembly as corresponds to at least some of the plurality of individual product components and the plurality of component manipulators;
- forming, in a manufacturing analysis platform, a structured product coding system for a given product by:
  - identifying the components to be used to fabricate the given product;
  - identifying part-mating operations to be used for manufacturing the given product;
  - identifying an initial discrete parsed combination of at least two of the components and their part-mating operation to be effected as corresponds to initiation of fabrication of the given product and further identifying at least one of the component manipulators to be used to make the initial discrete parsed combination and using the coded component identifiers, the coded part-mating operation identifier and the coded component manipulator identifiers to represent the identified initial discrete parsed combination as a particular corresponding structured product coding system entry;
  - identifying a subsequent discrete parsed combination of at least the initial discrete parsed combination and at least one of the components and one of the coded part-mating operations to be effected as further corresponds to continuation of the fabrication of the given product and further identifying at least one of the component manipulators to be used to make the subsequent discrete parsed combination and using the coded component identifiers and the coded component manipulator identifiers and the coded part-mating operation identifier to represent the identified subsequent discrete parsed combination as another corresponding structured product coding system entry.

- 2. (Original) The method of claim 1 wherein coding a plurality of individual product components includes coding, for a plurality of different products, the individual product components that substantially comprise such different products using at least corresponding coded component identifiers such that a given component as used in more than one product will nevertheless have a single corresponding coded component identifier.
- 3. (Original) The method of claim 1 wherein coding a plurality of individual product components using at least corresponding coded component identifiers includes using coded component identifiers that are comprised, at least in part, of an alphanumeric string.
- 4. (Original) The method of claim 3 wherein using coded component identifiers that are comprised, at least in part, of an alphanumeric string includes using coded component identifiers that are comprised, at least in part, of an alphanumeric string wherein at least portions of the alphanumeric string comprise parsed information fields.
- 5. (Original) The method of claim 1 wherein coding a plurality of component manipulators using at least corresponding coded component manipulator identifiers includes coding a plurality of component manipulators as a function, at least in part, of a type of component manipulator.
- 6. (Original) The method of claim 5 wherein coding a plurality of component manipulators as a function, at least in part, of a type of component manipulator further includes coding at least one of the component manipulators as a function, at least in part, of specific characteristics of the at least one component manipulator.
- 7. (Original) The method of claim 1 wherein identifying the components to be used to fabricate the given product includes identifying all of the components that are to be used to fabricate the given product.

- 8. (Original) The method of claim 1 wherein using the coded component identifiers and the coded component manipulator identifiers and the coded part-mating operation identifier to represent the identified initial discrete parsed combination as a particular corresponding structured product coding system entry includes using the coded component identifiers, the coded part-mating operation identifier and the coded component manipulator identifiers to specify a structured product coding system node.
- 9. (Original) The method of claim 8 wherein using the coded component identifiers, the coded part-mating operation identifier and the coded component manipulator identifiers to specify a structured product coding system node includes specifying the node as a part of a structured product coding system hierarchical tree.
- 10. (Original) The method of claim 9 wherein specifying the node as a part of a structured product coding system hierarchical tree includes specifying the node as a part of a structured product coding system binary assembly/disassembly tree.
- 11. (Original) The method of claim 1 wherein using the coded component identifiers and the coded component manipulator identifiers and the coded part-mating operation identifier to represent the identified initial discrete parsed combination as a particular corresponding structured product coding system entry and using the coded component identifiers, the coded part-mating operation identifier and the coded component manipulator identifiers to represent the identified subsequent discrete parsed combination as another corresponding structured product coding system entry includes presenting the structured product coding system entries on an active display.
- 12. (Original) The method of claim 11 wherein presenting the structured product coding system entries on an active display includes presenting the structured product coding system entries as leaves on a hierarchical assembly/disassembly tree.

- 13. (Original) The method of claim 1 and further comprising using the structured product coding system to automatically determine a predicted cost of manufacturing the given product.
- 14. (Original) The method of claim 1 wherein forming a structured product coding system for a given product further includes identifying component manipulator resetting actions to be effected as corresponds to fabrication of the given product and using the coded component manipulator identifiers to represent the identified component manipulator resetting actions as particular corresponding structured product coding system entries.
- 15. (Original) The method of claim 1 and further comprising using the structured product coding system to automatically determine a predicted cost of at least partially defabricating the given product.
- 16. (Original) The method of claim 1 and further comprising using the structured product coding system to determine a de-fabrication procedure to facilitate at least partial defabrication of the given product.
- 17. (Original) The method of claim 1 and further comprising using the structured product coding system to facilitate inventory control of at least one of:
  - at least some of the plurality of individual product components; and
  - at least some sub-assemblies comprised of at least some of the plurality of individual product components.
- 18. (Canceled Presuming entry of the post-FINAL Amendment offered with this brief)
- 19. (Canceled)
- 20. (Canceled)
- 21. (Canceled)

- 22. (Canceled)
- 23. (Canceled)
- 24. (Canceled)
- 25. (Canceled)
- 26. (Canceled)
- 27. (Canceled)
- 28. (Canceled)
- 29. (Canceled)
- 30. (Canceled)

(9) Evidence Appendix

None.

# (10) Related Proceedings Appendix

None.

Respectfully submitted,

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